

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-14 are in this case. Claims 9-14 were withdrawn under a restriction requirement as drawn to a non-elected invention. Claims 1-8 have been rejected. Claim 1 has now been amended.

35 U.S.C. § 102 Rejections

The Examiner has rejected claims 1-2 and 7-8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 4,469,676 to Hecmati et al. The Examiners rejections are respectfully traversed. Claim 1 has now been amended.

The Examiner states that U.S. Pat. No. 4,469,676 teaches a method of treating wrinkles by injecting cartilage cells into the wrinkle.

The present invention relates to the use of isolated cartilage producing cells (e.g., chondrocytes) in treating skin irregularities (cosmetic defects) such as wrinkles. As is detailed in the instant application, the present invention utilizes chondrocyte or chondrocyte progenitors harvested from cartilage and treated to form a cell suspension. Such a cell suspension is utilized directly or following culturing (proliferation) in treating cosmetic irregularities.

Although numerous prior art publications including U.S. Pat. No. 4,469,676 teach various uses of chondrocyte containing preparations in reconstructive surgery and tissue repair, none describe or suggest cosmetic repair of skin contour irregularities using cell suspensions which include isolated chondrocytes or chondrocyte progenitors.

As is clearly stated by Hecmati et al. (see for example the third line of the abstract) U.S. Pat. No. 4,469,676 teaches the use of an injectable composition which includes "sterile cartilage particles". Such particles are obtained by cutting cartilage into small pieces (1-5 inches), sterilizing the

cartilage pieces and then grinding these pieces into a paste that would pass through a syringe (see columns 3-4 of Hecmati et al.).

Hecmati et al. do not describe or suggest the use of isolated chondrocytes and as such, U.S. Pat. No. 4,469,676 does not anticipate or render obvious the teachings of the present invention. Although the cartilage preparation described by Hecmati et al. inherently includes chondrocytes, Hecmati et al. do not describe the advantages of using isolated chondrocytes as opposed to cartilage pieces and as such do not motivate one of ordinary skill in the art to practice the present invention.

As is described in the instant application, the use of isolated chondrocytes or chondrocyte progenitors provides numerous advantages in treating cosmetic defects. Use of isolated cells provides an easy and cost effective way to produce large amounts of a filler material which can be delivered in a minimally invasive fashion. In addition, qualities unique to the isolated cartilage producing cells ensure that the filled contour irregularity does not exhibit the rigidity characteristic of contour irregularities treated with fillers composed of cartilage and is more capable of resisting facial muscles movements thus substantially reducing the chances of wrinkles or rhytids returning. Furthermore, since chondrocytes will only proliferate until contact inhibition, the present approach traverses prior art over-filling limitations and ensures that contour depressions do not become unsightly bumps.

Finally, isolated chondrocytes exhibit several well known characteristics which are particularly advantageous in treatment of cosmetic defects including regenerative qualities (e.g., deposition of extracellular matrix), viability for time periods longer than that of chondrocytes forming a part of cartilage particles (e.g., paste), are not absorbed over time and do not typically elicit a physiological response (e.g., immune response).

In order to further distinct the present invention from the prior art cited by the Examiner, Applicant has elected to amend claim 1 to better define the subject of the invention. As such, amended claim 1 now recites the limitation:

"the method comprising introducing a suspension of cartilage producing cells into the skin contour irregularity"

which now defines the material introduced into the cosmetic irregularity as a cell suspension of isolated cells. Support for these amendments can be found throughout the instant application, see for example, page 12 lines 7-12.

In view of the above amendment and remarks, Applicant is of the opinion that the present invention as now claimed in not anticipated or rendered obvious by the teachings of U.S. Pat. No. 4,469,676.

The Examiner has rejected claims 1-5 under 35 U.S.C. § 102(b) as being anticipated by Park et al. Examiners rejections are traversed. Claim 1 has now been amended.

Contrary to the Examiners assertion, Park et al. do not teach implantation of isolated chondrocytes but rather implantation of a chondrocyte-seeded three-dimensional biodegradable template. Such a seeded implant possesses the rigidity limitations described above with respect to U.S. Pat. No. 4,469,676 as well as requires a more invasive approach for implantation. Like Hecmati et al., Park et al. do not discuss the use of isolated template-free cells and as such do not anticipate or render obvious the present invention as claimed.

The Examiner has rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Kim et al. Examiners rejections are traversed. Claim 1 has now been amended.

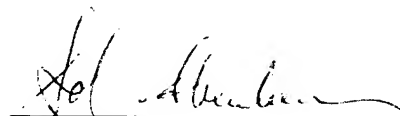
The teachings of Kim et al. are similar to those of Park et al. in that Kim et al. engineer isolated and cultured chondrocytes into predetermined shapes using scaffolds prior to implantation.

Since Kim et al. do not discuss the use of isolated non-engineered cells they do not anticipate or render obvious the present invention as claimed.

In conclusion, the present invention, as now claimed, teaches the use of isolated and optionally cultured cartilage cell suspensions in treating skin contour irregularities. The prior art, while teachings the use of chondrocyte containing tissue or chondrocyte seeded grafts, does not describe or suggest the use of injectable cell suspensions in treating skin contour irregularities.

In view of the above amendments and remarks it is respectfully submitted that claims 1-8 are now in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



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VERSION WITH MARKING TO SHOW CHANGES MADE

In the Claims:

1. (Amended) A method of cosmetically repairing a skin contour irregularity in a subject, the method comprising introducing a suspension of cartilage producing cells into the skin contour irregularity thereby effecting cosmetic repair thereof.